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IN THE CLAIMS

This listing of claims will replace all prior versions, and

listings, of claims in the application:

Listing of Claims:

1. (Currently Amended)   A method ~~of operating a device~~ for

determining a best-case response time of a first periodic task

~~performed within the device~~, the method comprising the acts of:

~~a first step of~~ determining that the first periodic task

performed within the device has a lower priority than a higher

priority of a second periodic task,

~~characterized in that the method further comprises:~~

~~a second step of~~ determining ~~that~~ the best-case response

time of the first periodic task ~~is~~ as being substantially equal to

the difference between a start of the first periodic task and a

completion of the first periodic task, the start being right after

a release of the first periodic task and the completion coinciding

with a release of the second periodic task, and

outputting the best-case response time, wherein the best-case response time of the first periodic task BR is substantially equal to the largest value that satisfies:

$$BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i}{T_j} \right\rceil - 1 \right) BC_j$$

wherein BC_i denotes a best-case computation time of the first periodic task τ_i, hp(i) denotes a set of tasks with a higher priority than the lower priority, and T_j denotes a period of activation of a task j of hp(i).

Claim 2 (Canceled)

3. (Currently Amended) A The method of determining a best-case response time of a first periodic task according to claim 2 claim 1, wherein WR_i denotes a worst-case response time of the first periodic task τ_i and the best-case response time BR_i can be found by an iterative procedure of k iterations, where k = 0,1, …comprising:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k)}{T_j} \right\rceil - 1 \right) BC_j$$

wherein the iterative procedure terminates when the same value

is found for two successive iterations of k.

4.(Currently Amended)   A—The method of determining a best-case

response time of a first periodic task according to Claim 3,

wherein the worst-case response time of the first periodic task is

based upon a worst-case computation time of the first periodic

task.

5.(Currently Amended)   A—The method of determining a best-case

response time of a first periodic task according to Claim 3,

wherein the worst-case response time of the first periodic task is

based upon a best-case computation time of the first periodic task.

6.(Currently Amended)   A—The method of determining a best-case

response time of a first periodic task according to claim 3,

wherein RJ_i denotes a release jitter of the first periodic task τ_i,

the release jitter being a variation in the release of the first

periodic task and the release jitter having a negative contribution

to the best-case response time:

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$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k) - RJ_j}{T_j} \right\rceil - 1 \right)^+ BC_j$$

wherein x^+ denotes the maximum of 0 and x.

7.(Currently Amended)   A system for determining a best-case

response time of a first periodic task ~~performed within the system~~,

the system comprising a processor configured to:

~~determination means conceived to~~ determine that the first

periodic task ~~performed within the system~~ has a lower priority than

a higher priority of a second periodic task,

~~characterized in that the system further comprises:~~

~~response time means conceived to~~ determine that the best-

case response time of the first periodic task is substantially

equal to the difference between a start of the first periodic task

right after its release and a completion of the first periodic task

that coincides with a release of the second periodic task,

calculate the best-case response time of the first periodic

task BR$_i$ according to the following formula:

$$BR_i = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i}{T_j} \right\rceil - 1 \right) BC_j$$

wherein BC_i denotes a best-case computation time of the first

periodic task τ_i , hp(i) denotes a set of tasks with a higher

priority than the priority of the first periodic task, and T_j

denotes a period of activation of a task j of hp(i).

Claim 8 (Canceled)

9. (Currently Amended)   A The system (800) of determining a

best-case response time of a first periodic task according to claim

8 claim 7, wherein the system further comprising second calculation

means (804) conceived processor is further configured to calculate

the best-case response time denoted by BR_i according to the

following iterative procedure of k iterations, where k = 0,1,…:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k)}{T_j} \right\rceil - 1 \right) BC_j$$

wherein WR_i denotes a worst-case response time of the first

periodic task τ_i and the iterative procedure terminates when the

same value is found for two successive iterations of k.

10.(Currently Amended) A The system (800) of determining a best-case response time of a first periodic task according to claim 7, the system further comprising third calculation means (806) conceived wherein the processor is further configured to calculate the best-case response time denoted by BR$_i$ corrected for a release jitter, the release jitter being a variation in the release of the first periodic task:

$$BR_i(0) = WR_i$$

$$BR_i(k+1) = BC_i + \sum_{j \in hp(i)} \left(\left\lceil \frac{BR_i(k) - RJ_j}{T_j} \right\rceil - 1 \right)^+ BC_j$$

wherein RJ$_i$ denotes the release jitter of the first periodic task τ$_i$, and x$^+$ denotes the maximum of 0 and x.

11.(Currently Amended) A computer readable medium storing a computer program product when executed arranged to perform the method according to Claim 1.

Claim 12 (Canceled)

13.(Currently Amended)   A television set ~~(910)~~ comprising ~~a~~ the system according to Claim 7.

14.(Currently Amended)   A set-top box ~~(1002)~~ comprising ~~a~~ the system according to Claim 7.

15.(Currently Amended)   The set-top box of Claim 14 wherein ~~system determines~~ the processor is further configured to determine from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the system.

16.(Currently Amended)   The television set of Claim 13 wherein ~~system determines~~ the processor is further configured to determine from the best-case response time of the first periodic task and a worst case response time of the first periodic task if a signal can be used by the system.

17.(Currently Amended)   A set-top box comprising a processor

arranged to perform the method according to Claim 1 wherein the

~~method determines~~ processor is configured to determine from the

best-case response time of the first periodic task and a worst case

response time of the first periodic task if a signal can be used by

the set-top box.

18. (Currently Amended) ~~The~~ A television set comprising a

processor arranged to perform the method according to Claim 1

wherein ~~method determines~~ the processor is configured to determine

from the best-case response time of the first periodic task and a

worst case response time of the first periodic task if a signal can

be used by the television set.

19. (Currently Amended) The system of Claim 7, wherein the

~~determination means determines~~ processor is further configured to

determine that the first periodic task has the lower priority than

a plurality of other tasks, and ~~the response time means determines~~

that the best-case response time of the first periodic task is

substantially equal to the difference between the start of the

first periodic task and the completion of the first periodic task,

the start being right after the release of the first periodic task

and the completion coinciding with a release of the plurality of

other periodic tasks.

20.(Currently Amended) The method of Claim 1, wherein the

first ~~step of~~ determining act determines that the first periodic

task has the lower priority than a plurality of other tasks, and

the second ~~step~~ determining act determines that the best-case

response time of the first periodic task is substantially equal to

the difference between the start of the first periodic task and the

completion of the first periodic task, the start being right after

the release of the first periodic task and the completion

coinciding with a release of the plurality of other periodic tasks.